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Railroad Investigation Report: RIR-25-02

# CSX Transportation Head-on Train Collision

<b>Location</b>	Folkston, Georgia
<b>Date</b>	April 15, 2024
<b>Accident type</b>	Head-on collision
<b>Northbound striking train</b>	Freight train CSX I03215 2 crewmembers 2 locomotives, 27 intermodal railcars
<b>Southbound stationary train</b>	Freight train CSX L74314 2 crewmembers 3 locomotives, 83 railcars
<b>Track</b>	Main track, signalized
<b>Hazardous materials</b>	None
<b>Fatalities</b>	0
<b>Injuries</b>	3
<b>Damages</b>	\$720,000

## Summary

On April 15, 2024, at 1:20 p.m. local time, northbound CSX Transportation (CSX) intermodal train I03215 traversed a misaligned switch and collided head-on with stationary, loaded rock train L74314 while traveling about 28 mph on CSX's Jesup Subdivision near Folkston, Georgia.<sup>1</sup> Two crewmembers of train I03215 and one crewmember of train L74314 were hospitalized for non-life-threatening injuries.

Before the collision, the track signals near the accident location were suspended for maintenance and upgrades, and movement through the area was being controlled as track warrant territory.<sup>2</sup> During the signal suspension, CSX assigned a conductor with 3 years of experience to manually throw switches for train movements between tracks. This conductor was responsible for a total of four dual-controlled, power-operated switches, which can be operated either through the signal system or by hand. When interviewed by the National Transportation Safety Board (NTSB), the conductor said he

<sup>1</sup> Visit [ntsb.gov](https://www.ntsb.gov) to find additional information in the [public docket](#) for this NTSB accident investigation (case number [RRD24LR011](#)), including detailed factual reports about the circumstances of the accident.

<sup>2</sup> *Track warrant territory* refers to sections of track where train movements are governed by specific permissions granted by a dispatcher or control operator. This system is often used in areas without signals, known as "dark territory." For the territory involved in this accident, trains had to receive verbal or written authority to occupy and move along the track.

confirmed these switches were reversed—that is, lined to divert trains. He was later tasked with normalizing all four switches manually, or lining them not to divert trains off the track on which they enter the switch.

Some dual-control power switches, such as those the conductor was lining, can be difficult to operate because of the transition from powered to manual (or “hand-throw”) mode. Unlike single-controlled manual switches, when switching dual-controlled power switches to hand-throw mode, the hand-throw lever may need to be cycled back and forth to line the switch to the intended position. This is necessary because the internal components and locking mechanisms sometimes disengage during the transition from powered to hand-throw mode. During his interview, the conductor reported varying levels of resistance as he attempted to normalize all four switches, an indication that some had disengaged locking mechanisms.

Images from forward-facing locomotive image recorders captured shortly before the collision showed that one of these four switches was reversed. This switch was lined to divert traffic from main track 1 onto main track 2, where train L74314 was parked. Train I03215, which was intended to remain on main track 1, approached this switch while traveling about 39 mph. The crew saw that the switch was misaligned before the train reached it and began braking. The train decelerated but still traversed the switch and diverted onto main track 2 where it struck the parked train (see figure 1).



**Figure 1.** Lead locomotives from both trains after impact.

## Analysis

This collision resulted from an improperly lined switch. The conductor likely threw the main track 1 switch once—the typical procedure for normalizing a reversed manual switch—and inadvertently left it lined for main track 2. When interviewed by the NTSB, he did not remember training on or ever operating a dual-controlled, power-operated switch in manual mode. Thus, he likely did not recognize that the hand-throw lever may need to be cycled back and forth to line the switch to the intended position. The training he was provided during his 3-year tenure with CSX was insufficient to prepare him with the knowledge, skills, and abilities to perform this infrequent task on the day of the accident.

The operation of a dual-controlled power switch is significantly different from other switches. However, employees are required by federal regulation and CSX's operating rules to verify the position of any switch after operating it. This administrative procedure is designed to act as a safety net for potential human error during the operation of switches. Had CSX required the signal maintainer to confirm, or provide

secondary verification, of the switch position after the conductor manipulated it, the signal maintainer likely would have identified and corrected the misaligned switch.

CSX conductor training includes a video and hands-on training with dual-control power switches. A review of CSX records showed that the conductor had completed this training, though these records did not indicate whether he completed the hands-on portion; at the time he completed the training, class sizes sometimes prevented some trainees from completing all hands-on exercises.

CSX did not have a rule in place at the time of the accident requiring trains operating under signal suspensions to operate at restricted speed—that is, slowly enough for the crew to stop the train within half the range of visibility. The train in this accident was traveling above restricted speed and therefore unable to stop before reaching the switch or the train parked on main track 2 even though the crew saw the misaligned switch and applied the train’s brakes.

## **Probable Cause**

The NTSB determines that the probable cause of the CSX Transportation head-on train collision was a combination of an improperly lined dual-controlled, power-operated switch that a conductor did not know how to properly operate, and the conductor’s failure to verify its position as required. Contributing to the accident was CSX Transportation’s insufficient training (recurring) and failure to implement operational procedures, such as a restricted speed requirement and secondary verification of switch position, to mitigate the risk of misaligned switch accidents during a signal suspension.

## **Lessons Learned**

On April 18, 2024, CSX published a safety alert in response to the collision in Folkston, Georgia. The safety alert discussed operating requirements for dual-controlled, power-operated switches. The alert also emphasized that “all trains must approach all switches within the limits of the signal suspension at restricted speed until it is known they are lined for the authorized and intended route.” This change is intended to give train crews time to stop if they see that they are approaching a misaligned switch. In addition, CSX published a signal suspension safety bulletin that discusses signal suspension job briefing protocols and field management audits and testing. These protocols include secondary switch verification by including a signal maintainer in the job briefing and having the signal maintainer double-check a conductor’s alignment of each switch.

This accident underscores the importance of proper switch protocols and train handling under conditions, such as a signal suspension, that prevent automated systems like positive train control from providing an additional margin of safety.

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For more detailed background information on this report, visit the [NTSB Case Analysis and Reporting Online \(CAROL\) website](#) and search for NTSB accident ID RRD24LR011. Recent publications are available in their entirety on the [NTSB website](#). Other information about available publications also may be obtained from the website or by contacting –

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